UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

4WD-SSMB

MEMORANDUM

SUBJECT: Pioneer Sand Superfund Site
Five-Year Review

FROM: Caroline Robinson, RPM
North Florida Site Management Section

THRU: Curt Fehn, Chief
South Site Management Branch

TO: Richard D. Green, Director
Waste Management Division

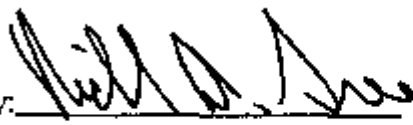
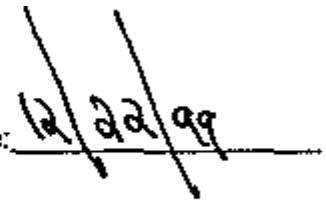
Attached please find the Five-Year review Report for the Pioneer Sand Superfund Site in Pensacola, Escambia County, Florida. Section 121(C) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, requires that if a remedial action is taken that results in any hazardous substances, pollutants, or contaminants remaining at the site, the Environmental Protection Agency (EPA) shall review the remedial action no less than every five years after initiation of the remedial action to assure that human health and the environment are being protected by the implemented remedial action.

In September 1986 the Record of Decision (ROD) was signed. During the remedial action at the site, operation and maintenance requirements included 1) periodic mowing and inspection of the final cover system; 2) routine maintenance of the leachate seep and gas vent system; and periodic sampling and testing of the groundwater monitoring wells. Since the ROD execution, institutional controls have been imposed at the Site to prohibit trespassers from gaining access to the pond. Applicable or relevant and appropriate requirements (ARARs) identified in the ROD not requiring review were: 1) Florida Surface Water Quality Standards - Since the large pond was previously remediated and no leachate is being discharged to the pond no further evaluation is warranted; 2) Resource Conservation and Recovery Act (RCRA) hazardous waste standards were also listed in the ROD as ARARs for the site. The current site operation does not generate any hazardous waste for off-site disposal, therefore an evaluation of RCRA Subtitle C regulations is not warranted; and 3) the ROD called for the construction of a leachate collection system with leachate cleanup standards to be developed during the design phase of the system. Since the need for the system never materialized due to the nature of the leachate, cleanup standards for the leachate system were never established. The Pioneer Sand Superfund Site was deleted from the National Priorities List on February 8, 1993.

The remedies at the Pioneer Sand Superfand Site remain protective of human health and the environment. The cap appears to be effective at containing contaminants, preventing infiltration of rainwater, and preventing direct contact with contaminated soils. The leachate system is operating as intended. Institutional controls at the landfill remain in place and are effective.

The attached Five-Year review, prepared by the US Army Corps of Engineers, Mobile District, documents the current conditions at the site and states that the ROD has been implemented and remains protective and poses no unacceptable risk to human health and the environment. EPA concurs with this report and its conclusions. Since this is a statutory site that requires ongoing reviews, the next review will occur within five years of the completion of this review report.

Attachment

Approved by:  Date: 

Richard D. Green, Director
Waste Management Division
US EPA Region 4

US Army Corps
of Engineers
Mobile District

Superfund Five-Year Review Report

Pioneer Sand Site

Escambia County, Florida

Prepared for
U.S. Environmental Protection Agency, Region IV
August 1999

August 15, 1999

EPA Five-Year Review Signature Cover

Preliminary Information

Site name: **Pioneer Sand Site**			EPA ID: **FLD056116965**
Region: **4**	State: **Florida**	City/County: **Pensacola/Escambia County**	
LTRA* (highlight): **Y N**		Construction completion date: **7/19/91**	
Fund/PRP Lead: **PRP**			NPL status: **Final**
Lead agency: **EPA, Region 4**			
Who conducted the review (EPA Region, state, Federal agencies or contractor): **US Army Corps of Engineers, Mobile District**			
Dates review conducted: From: **06/01/99** To: **08/01/99**			Date(s) of site visit: **????**
Whether first or successive review: **First**			
Circle: **Statutory** Policy		Due date: **08/15/99**	
Trigger for this review (name and date): **Construction Start, December 1990**			
Recycling, reuse, redevelopment site (highlight): **Y N**			

Deficiencies:

Several minor deficiencies, not affecting protectiveness, were identified. See attached report Section VII: Deficiencies.

Recommendations:

Recommendations are listed in the attached report, Section VIII: Recommendations.

Protectiveness Statement(s):

The remedial actions at the Pioneer Sand Site are protective. Because the remedial actions are protective, the remedy for the site is protective of human health and the environment.

Other Comments:

The deficiencies noted during this review are not immediate threats to the protectiveness of the remedy. Once these items are investigated and corrected, long-term protectiveness, operation, and site safety will be improved.

Signature of EPA Regional Administrator or Division Director, and Date

_____

Signature Date

_____

Name and Title

Pioneer Sand Site
Escambia County, Florida
Superfund Five-Year Review Report

Table of Contents

Pioneer Sand Site
Escambia County, Florida
Superfund Five-Year Review Report

I. Introduction and Purpose

The U.S. Army Corps of Engineers, Mobile District (USACE), on behalf of the U.S. Environmental Protection Agency, Region 4 (EPA), has conducted a five-year review of the remedial actions implemented at the Pioneer Sand Site in Pensacola, Escambia County, Florida. This report documents the results of that review. The purpose of five-year reviews is to determine whether the remedial actions at a site are protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify deficiencies found during the review, if any, and recommendations to address them.

This review is required by statute. Section 121© of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and Section 300.430 (f) (4) (ii) of the National Oil and Hazardous Substance Contingency Plan (NCP), require that periodic (no less than every five years) reviews be conducted for sites where hazardous substances, pollutants or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure following the completion of all remedial actions.

This is the first five-year review for the Pioneer Sand Site. The trigger for this statutory review is the initiation of remedial action (RA) at the site, signified by the actual RA start date shown in EPA's CERCLIS/WasteLAN database. All remedies have been constructed, and the cover systems, leachate collection system, and gas flare system continue to operate as intended.

The EPA has established a three-tiered approach to conducting five-year reviews, the most basic of which provides a minimum protectiveness evaluation (Level I review). The EPA determines the level of review based on site-specific considerations, including the nature of the response action, the status of on-site response actions, and the proximity to populated areas. A Type I review was conducted at the Pioneer Sand Site. This review consisted of a review of the Remedial Action and As-Built Drawings, a review of the Operation and Maintenance Manual, a review of the ROD, a review of the 5-year review site checklist, a site visit, completion of the 5-year review site checklist, review of the groundwater monitoring data (groundwater levels and groundwater contaminant levels), and preparation of this report.

This review will be placed in the Site files and local repository for the Pioneer Sands Superfund Site. The repository is located at the University of West Florida Regional Library, 200 West Gregory Street, Pensacola, Florida.

II. Site Background

A. Site Description

The Pioneer Sand Site is located near the town of Bellview, approximately five miles northwest of the City of Pensacola in the extreme western portion of the Florida Panhandle. A Naval Air Base, Saufley Field, is located less than ½ mile northwest of the site. Perdido Bay is located approximately 2 miles southwest of the site. The site's approximate geographic coordinates are 30 degrees 27 minutes 30 seconds north latitude and 87 degrees 19 minutes 45 seconds west longitude.

The Pioneer Sand Company is an inactive sand mining facility. The area of concern is an inactive 11-acre quarry, owned by the company, into which shredded auto parts, construction debris, and various industrial sludges and resins have been deposited. Approximately 75% of the site is an excavation pit, while the remaining 25% of the site is a fill area consisting of the material mentioned above. The excavation pit extends to a maximum depth of about 30 feet. A surface impoundment and a quarry pond are located in the excavation area.

The aquifer of concern underlying the Pioneer Sand Site is the Sand-and-Gravel Aquifer. This resource provides the only potable groundwater available in the area. Results from the Remedial Investigation indicate, at this time, that no private wells near the site are contaminated; furthermore, additional protection is provided in that almost all of the residents in the vicinity of the Pioneer Sand Site are on a public water supply from a deep well located approximately one mile southeast of the site.

B. Site Chronology

From the mid-1950's until 1978, the Pioneer Sand Pit was used as a borrow area for supplying sand to construct roads, buildings, etc. A Class III disposal permit was granted in 1974 which allowed the disposal of inert materials including construction debris and shredded automobile strippings. According to the files, during this period various types of phenols and resin compounds were deposited from Newport Industries (currently Reichhold Chemical Company). Domestic and industrial wastes including metal plating sludges were also received from the Pensacola Naval Air Station.

In 1981, the Florida Department of Environmental Regulation decided not to renew the disposal permit and ordered that the dumping of waste cease at the site. By this time, approximately one-forth of the 11-acre pit had been backfilled to the original land surface with full material.

In late 1981, a preliminary contamination survey was conducted to evaluate the extent of contamination at the site. Although elevated levels of various metals and organics were found, the sampling of private wells in the area showed no appreciable contamination when compared to the background water quality for the area.

Based on the Remedial Investigation (RI) results for PCB analysis of soils at the site, the EPA conducted an immediate removal of PCB contaminated "hotspots" at the site on August 6, 1986. All known areas of PCB concentrations greater than 50 ppm were removed.

Table 1: Chronology of site events.

Event	Date
Initial discovery of the problem	November 01, 1979
Removal actions	August 6, 1986
NPL listing	September 08, 1983
Remedial Investigation and Feasibility Study (RI/FS) complete	September 26, 1986
Record of Decision (ROD) signature	September 26, 1986
Remedial design completion	July 08,1988
Actual RA start	March 23, 1990
Construction start	May 17, 1990
Construction completion	March 28, 1991
Deletion from NPL	February 08, 1993

IlI. Results of Site Investigations

A. General

The RI was conducted in late 1984 and early 1985 and its main purpose was to assess: the types of contaminants present at the site; the lateral and vertical extent of contamination; the rate of movement of contaminants; contaminant pathways away from the source (fill material); and the potential impact upon the residents. The following general findings resulted from the Remedial Investigation.

1) Within the fill material onsite, a wide variety of Priority Pollutant volatile and semi-volatile organic compounds and various Priority Pollutant metal concentrations were found in soil and water samples obtained from near surface and at shallow depths within the fill.

2) The site is underlain by a shallow aquifer, 20-50 feet in depth, and a deeper sand aquifer from 80 to 250 feet in depth. Flow in the shallow aquifer is toward the south at approximately one to two feet per day. Flow in the deeper aquifer is toward the west at less than one foot per day.

3) One well installed thorough the fill material and completed beneath the fill in a semi-permeable confining bed, had concentrations of metals and organics well in excess of drinking water standers. Additionally, a leachate sample obtained from a fill material

seep contained lead in concentrations exceeding the primary drinking water standard; cadmium in concentrations approaching the primary drinking water standard; and phenol, ethyl benzene, and toluene in concentrations exceeding 100 ppb. This sample represents leachate that is migrating into the sludge pond area.

4) None of the monitor wells (7 shallow, 4 deep) around the perimeter of the site had any indication of contamination attributed to the disposal activities of the Pioneer Sand Site.

5) Fifteen nearby private wells were screened for volatile organics and seven were selected for complete Priority Pollutant analysis. No contamination was found in any of the nearby private wells. Additional protection is provided in that almost all of the residents in the vicinity of the Pioneer Sand Site are on a public water supply drawing from a deep well located approximately one mile southeast of the site.

6) Extraction Procedure Toxicity analysis of fill material samples revealed the presence of cadmium and lead. In one sample, the cadmium (0.63 mg/1) and lead (4.11 mg/1) concentrations found in the fill material approached, but did not exceed, the concentrations which would designate the fill material as a hazardous waste (1.0 mg/1 and 5.0 mg/1) respectively.

In summary, extensive investigations conducted at the Pioneer Sand Site (chemical, hydrological, and geological) confirm that the contaminants dumped at the Pioneer Sand Site from 1973 to 1979 have not migrated off the site. Factors favoring the immobility of contaminants include: 1) the clay spoils covering the contaminants which greatly limit the amount of flushing of chemicals into the groundwater; 2) relative low permeability of the fill material which acts as a deterrent to lateral groundwater flow. There is evidence that groundwater inflow towards the site is deflected around the fill material rather than migrating through the site; 3) lack of surface drainage features away from the site, i.e., lack of chemical transport via streams away from the site; and 4) the high volatility of the more mobile organic compound which tend to “volatilize” in extremely short distances.

IV. Summary of Response Actions

A. Remedial Objectives

The remedial objectives of the Pioneer Sands Site are as follows:

1. Be protective of human health and the environment;
2. Attain applicable or relevant and appropriate requirements (ARARs) of State and Federal regulations;
3. Be cost-effective;
4. Utilize permanent solutions and alternate treatment technologies or resource recovery technologies to the maximum extent practicable; and
5. Address whether the preference for treatment that reduces toxicity, mobility, or volume as a principle element is satisfied.

B. Remedy Selection

The record of decision (ROD) for the Pioneer Sand Site was signed on September 26, 1986. The ROD selected the following remedy:

1. A Fill Area Cover System
2. Leachate Collection, Treatment, and Onsite Disposal
3. Surface Water Treatment and Onsite Discharge
4. Cover System for Sludge Pond Waste

A Consent Decree in the matter of United States of America v. Reichhold Chemicals, Inc., was entered into whereby the agreement allowed for the Remedial Design/Remedial Action (RD/RA) to be performed by the Settling Defendants and oversight of such RD/RA by EPA and FDEP.

The selected remedy met the goals of the RA as discussed below:

1. Be protective of human health and the environment. The remedy selected was based on potential future endorsement to public health, welfare, and the environment. Site file records provided reasonable evidence that substantial quantities of hazardous substances and contaminants existed in the Pioneer Sands site.

The selected alternative was considered to be protective of human health and the environment. The fencing, institutional controls, and cover systems would provide protection from direct contact with the contaminated materials. Capping of the site would also reduce infiltration from precipitation and significantly reduce the migration of contaminants into the groundwater and surface water systems.

Monitoring of the groundwater and surface water would identify any failures of the containment system proposed to be installed at the site. Should elevated levels of contaminants be detected, additional corrective measures would be taken to abate any threat.

2. Attain applicable or relevant and appropriate requirements (ARARs) of State and Federal regulations. The selection of the site capping by the EPA was determined to comply with state solid waste landfill regulations. The selected remedial alternative was also determined to comply with specific public health and environmental requirements. These ARARs are referred to as “chemical specific” requirements. Public health and environmental ARARs expressed as chemical-specific limits or requirements would be addressed by routine monitoring of groundwater and vented gas.

3. Be cost-effective. The selected remedy would comply with relevant portions of the FDEP solid and hazardous waste landfill closure and post-closure ARARs. The selected alternative was cost-effective since it was the least expensive alternative that satisfied the regulations. The selected alternative was determined to be the most cost-effective alternative which will meet all ARARs over time.

4. Utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. A permanent remedy involving treatment or recovery technologies was not selected for the Pioneer Sand Site. Permanent remedies including pumping and treating of groundwater, and incineration of the sludge in the sludge lagoon were evaluated and judged to be impracticable for the site.

5. Address whether the preference for treatment reduces toxicity, mobility, or volume as a principle element is satisfied. SARA mandates a preference for the selection of a remedy that permanently and significantly reduces the volume, toxicity, or mobility of the hazardous substances and contaminants. Application of treatment technologies that satisfy this preference were evaluated for the Pioneer Sands Site and found to be impracticable for the following reasons:

a. Data indicated that contaminated groundwater existed only within the legal boundaries of the site at low levels. The threat to nearby residences was considered to be low. As a result of the new soil/clay caps proposed in the selected remedy, the threat was determined to be virtually eliminated. Consequently, pumping and treatment of groundwater for contaminants was not determined to be cost-effective.

b. The size of the landfill would have resulted in a cost of the removal and treatment or disposal of the waste to be extremely high. In addition, segregation of hazardous waste from non-hazardous waste would have been impracticable.

c. Full ARARs compliance will be achieved over time by landfill closure, which would be protective of human health and be cost-effective.

C. Remedy Implementation

The Remedial Action construction start date was May 17, 1990 and was completed on March 28, 1991. Construction activities consisted of the following:

1. Sludge Stabilization
2. Installation of the leachate collection systems
3. Synthetic Cover System
4. Gas Venting System

Clean Sites Environmental Services, Inc. (CSES) was retained by the lead settling defendant to perform construction management, contract administration, and field and laboratory testing as required to document Remedial Actions at the Mid-State site. A registered Professional Engineer from CSES was present at the landfill on a near full-time basis, acting as Construction Manager and Certifying Engineer, performing field engineering duties, coordinating and overseeing construction quality control/quality assurance activities, and performing contract administration. A representative of FDEP was present on-site as well.

The construction documentation program included field and laboratory testing in substantial conformance with the requirements outlined in the ROD Construction Quality Assurance (CQA) Plan. The CSES field personnel maintained field logbooks; completed inspection data sheets for all inspections performed, and completed daily summary reports to document the observed daily activities. In addition, a photographic record of the Remedial Action work was maintained.

In general, the Remedial Actions were constructed and documented in accordance with the approved plans and specifications.

The Remedial Action systems were tested for operation integrity and found to comply with the intent of the Remedial Design.

D. Operation and Maintenance

The Settling Defendants have contracted with CSES to perform site operation and maintenance (O&M). The work is being conducted in accordance with the O&M Plan. The O&M plan incorporates all EPA and State quality assurance and quality control procedures and protocols.

During the long-term remedial actions at the site, O&M requirements for the Pioneer Sand Site include:

1. periodic mowing and inspections of the final cover system;
2. routine maintenance of the leachate seep and gas vent system;
3. periodic sampling and testing of the groundwater monitoring wells;

When contacted about this review, CSES reported that they have not experienced significant O&M difficulties to date, other than trespassers vandalizing the perimeter fencing and periodic erosion as a result of hurricanes.

O&M costs are running approximately $50,000 per year. This amount covers sampling and analysis from monitoring wells, visual observations in the leachate trench risers and vegetative cover maintenance. In April 1999 CSES incurred an additional cost of $20,000 for erosion repairs.

V. Summary of Site Visit and Findings

A. General

The Pioneer Sand Site five-year review site inspection was held on July 20, 1999. The following people participated in the review:

1. Robert P. Beacham, USACE Mobile District, Environmental Engineer
2. Greg Mellema, PE, USACE HTRW Center of Expertise, Geotechnical Engineer
3. Scott R. Miller, P.E., Clean Sites Environmental Services, Inc., Project Manager

This five-year review consisted of the following activities: a review of relevant documents (see Attachment A, Documents Reviewed); interviews with representatives of the O&M contractor, and a site inspection. The completed report will be placed in the local information repository. Notice of its completion will be placed in the local newspaper, and local contacts will be notified by letter.

B. Interviews

A summary of the interview is provided below.

O&M Contractor: Mr. Miller. Mr. Miller accompanied the inspection team to the site. Mr. Miller provided a summary of analytical results and stated that contamination was not leaving the site based on the groundwater samples. Mr. Miller pointed out where there has been some erosion on the site as a result of recent hurricane events in the area and provided photographs of the repair operations on said erosion. Mr. Miller also commented on private individual cutting the chain link perimeter fence to gain access to the site, presumably for fishing in the pond.

C. Site Inspection

General. Representatives of USACE and CSES took part in the site inspection. During the site inspection, the remedial systems, groundwater monitoring wells and general site conditions were inspected and observed. The inspection evaluated the landfill cover systems, the leachate collection system, the groundwater monitoring system, and the site drainage and fencing. The inspection began with an offsite meeting to discuss safety issues, inspection objectives and methods, and the schedule. The weather during the inspection was hot with scattered thunderstorms.

Cover System. The cover system consist of a vegetative cover over an 18 inch thick soil layer, a geomembrane and then a 12 inch sand layer placed over fill material. The Pioneer Sands cover system was found to be in relatively good condition with no noticeable settlement observed. The vegetative cover was thorough and abundant. Some ruts were observed which was the result of recent grass cutting efforts. The cover system should be mowed less frequently to reduce the rutting of the cover system. CSRS indicated they had discussed a less frequent mowing schedule (currently at twice in a 45 day period) with EPA Region IV however no formal proposal has been submitted by CSRS. High slump concrete has been placed as reinforcement at two areas that erosion has recently occurred. The erosion repairs were in good condition and no problems were observed. No erosion was evident.

Gas Vent and Leachate Collection Systems. The gas vent system consists of a 4 inch diameter PVC pipe on 75 foot intervals which extend 3 feet above ground surface and extends 3 feet below the bottom of the sand layer of the cap. The leachate collection trench is 2 feet wide and has a bottom depth of 45 feet above mean sea level. There is 5.5 feet of ¾ inch crushed stone/pea gravel in the bottom of the trench which surrounds a 4 inch corrugated polyethylene pipe perforated with geotextile fabric wrap.

The leachate collection system and gas vent system was inspected. The following observations were made:

1. The gas vent system appeared in good condition. One vent cap was missing and was pointed out to Mr. Miller. Mr. Miller stated that he would replace the missing cap.

2. The leachate collection system was in good condition as well. The systems consist of a manhole at either end and sampling ports evenly spaced between the two manholes.

Monitoring Wells. All of the monitoring wells on the site were inspected. Overall, the general quality of the wells is good.

Locks were missing from some of the well covers and these were pointed out to Mr. Miller. Mr. Miller stated he would have new locks installed. No other issues were observed.

Other Site Features. Site access road was in good shape. Fence damage was noted on the north fence line. This damage was caused by trespassers gaining access to the site.

D. Review of Applicable or Relevant and Appropriate Requirements (ARARs)

An ARAR review was performed for the site in accordance with the draft EPA guidance document, "Comprehensive Five-Year Review Guidance," EPA 540R-98-050, April 1999.

Documents reviewed for the ARAR analysis:

1. Record of Decision, 26 September 1986
2. October 19, 1993 Groundwater Sampling Results

ARARs Identified in the ROD Requiring Evaluation During the Five-Year Review:

1. Florida State Water Quality Standards for Class G-II Groundwater

Florida State Water Quality Standards for Class G-II Groundwater: EPA five-year review guidance requires a comparison of standards identified in the ROD against current standards. If a current standard is more stringent than the previous standard, the review process continues utilizing standards originally identified in the ROD as well as those current standards that are more stringent than those in effect at the signing of the ROD. A listing of 1986 Florida Class G-II groundwater standards was not available for this review. Therefore, current Florida groundwater standards were used in the ARAR analysis. For purposes of this review, it was assumed that the current standards are at least as stringent as those in effect in 1986.

Current Florida standards for Class G-II groundwater are codified in F.A.C. 62-520.420, Standards for Class G-I and G-II Ground Water. The 1993 groundwater sampling data are all below Florida groundwater standards for those organic and inorganic contaminants sampled for.

However, per the ROD, waste disposed of at the site included various phenols and resin compounds as well as PCBs. According to the Operations and Maintenance (O&M) Plan, additional sampling was conducted at the site in August 1990. During this sampling event, neither phenols and resin compounds nor PCBs were detected. The approved O&M plan points out this issue of non-detects and then went on to propose that sampling will be limited to total and dissolved chromium, total and dissolved cadmium, and volatile organic aromatics.

Other ARARs Identified in the ROD not Requiring a Review:

1. Florida Surface Water Quality Standards were identified as ARARs in the ROD. Since the large pond was previously remediated and no leachate is being discharged to the pond further evaluation is not necessary.
2. RCRA hazardous waste standards were also listed in the ROD as ARARs for the site. The current site operation does not generate any hazardous waste for off-site disposal therefore an evaluation of RCRA Subtitle C regulations is not warranted.
3. The ROD called for the construction of a leachate collection system with leachate cleanup standards to be developed during the design phase of the system. As the need for the system never materialized due to the nature of the leachate, cleanup standards for the leachate system were never established.

E. Groundwater Data Review

General. Data review for groundwater consisted of reviewing the following information:

1. Semiannual Report for Operations and Maintenance from October 1992 through April 14,1999

2. Ground Water Sampling results dated July 9, 1993 and November 13, 1997

Semiannual Report for Operations and Maintenance(O&M Report). The O&M reports included analytical data for the background well and the monitoring wells (MWs). The analytical data consisted of test results for volatile organic compounds (VOCs), metals, and indicator parameters including pH, Specific conductance, temperature and depth to ground water.

All samples have been below detection limits for purgeable aromatics, cadmium, dissolved cadmium and dissolved chromium. The background well has had a consistent detection of total chromium.

Findings. MW-2A is the background well. Analytical data indicates that total chromium is present.

Summary. Based on the analytical data, no contamination is leaving the site and contamination levels are below action levels. The potential exist that off-site contamination may be migrating toward the site based on analytical data on MW-2A.

F. Leachate Collection System

The system is in good condition. No problems were observed..

V1. Assessment

The following conclusions support the determination that the remedy at the Pioneer Sand Site remains protective of human health and the environment:

Effectiveness of Remedy: As noted above, the cover systems are intact and the leachate collection systems are operating as intended. The cap has adequate and controlled vegetation cover, and there are no signs of erosion. Contamination levels are below action levels. Institutional controls are in place, and no current or planned changes in use at the site suggest that they are not effective. These factors appear to indicate that the remedial actions continue to be effective.

These factors indicate that the remedial actions continue to be effective.

Adequacy of O&M: O&M procedures are consistent with requirements. No significant difficulties have occurred to date.

Early Indicators of Potential Remedy Failure: No early indicators of potential remedy failure were noted during the review. O&M costs and maintenance activities have been consistent with expectations.

The recent exceedances discussed herein do not appear to be a result of potential remedy failure.

VII. Deficiencies

Four deficiencies were discovered during the five-year review. It is unlikely that these deficiencies are significant enough to affect protectiveness.

A. The cover system vegetation mowing operations may be too frequent. Currently mowing operations are to take place twice in a 45-day period.

B. The perimeter fence has been cut by trespassers to gain access to the pond located within the site. This has been a constant problem for the O&M contractor. Attempts should be made to educate the local community that this practice should be changed.

C. Analytical data seem to indicate that the upgradient well is experiencing low levels of contamination.

VIII. Recommendations

The following recommendations are made to address the deficiencies noted above:

A. The cover system vegetation needs to be mowed less frequently. Currently the cover system is mowed twice in a 45-day period. This could be reduced to once every 45 days, thereby not only providing a cost savings for the site but will also reduce the adverse impacts that the mowing equipment (rutting the cap system).
B. Attempts should be made to educate the local population that this is a Superfund site and that the chain link fence surrounding the site should not be crossed.
C. EPA Region IV may want to conduct further investigations up gradient of the site to determine any future potential sources of contamination to the upgradient well.

IX. Protectiveness Statement

The remedies at the Pioneer Sand Site remain protective of human health and the environment. The cap appears to be effective at containing contaminants through preventing infiltration of rainwater and preventing direct contact with contaminated soils. The leachate system is operating as intended. Institutional controls at the landfill remain in place and are effective.

X. Next Review

This is a statutory site that requires ongoing five-year reviews. EPA will conduct the next review within five years of the completion of this first five-year review report. The completion date is the date of the signature shown on the signature cover attached to the front of the report.

Attachment A

Documents Reviewed

Final Remedial Investigation Report, Pioneer Sand Site, Marathon County, Wisconsin, EPA WA20-5LF7.0, April 8,1988.

Record of Decision, Pioneer Sand Site, Escambia County, Florida.

Consent Decree, Pioneer Sand Site, Escambia County, Florida

Semiannual Report for O&M April 1999

Semiannual Report for O&M October 1998

Semiannual Report for O&M April 1998

Semiannual Report for O&M October 1993

Semiannual Report for O&M April 1993

O&M Report on 4th Quarter Sampling August 31, 1992

O&M Report on 3rd Quarter Sampling June 8, 1992

O&M Report on 2nd Quarter Sampling April 29, 1992

O&M Report on 1st Quarter Sampling November 14, 1991

Remedial Action Plan by Clean Sites Environmental Services June 12, 1990

LNAPL Immobilization Report, by ERM March 1991

Acceptance Report for Completion of Sludge Stabilization, May 1991 & EPA Acceptance Letter, June 1991

Acceptance Report for Completion of Leachate Collection Trench, June 1991 & EPA Acceptance Letter July 1991

Acceptance Report for Completion of Gas Collection and Venting System, July 1991 and EPA Acceptance Letter August 1991

Acceptance Report for Completion of Synthetic Cover System, August 1991 and EPA Acceptance Letter September 1991

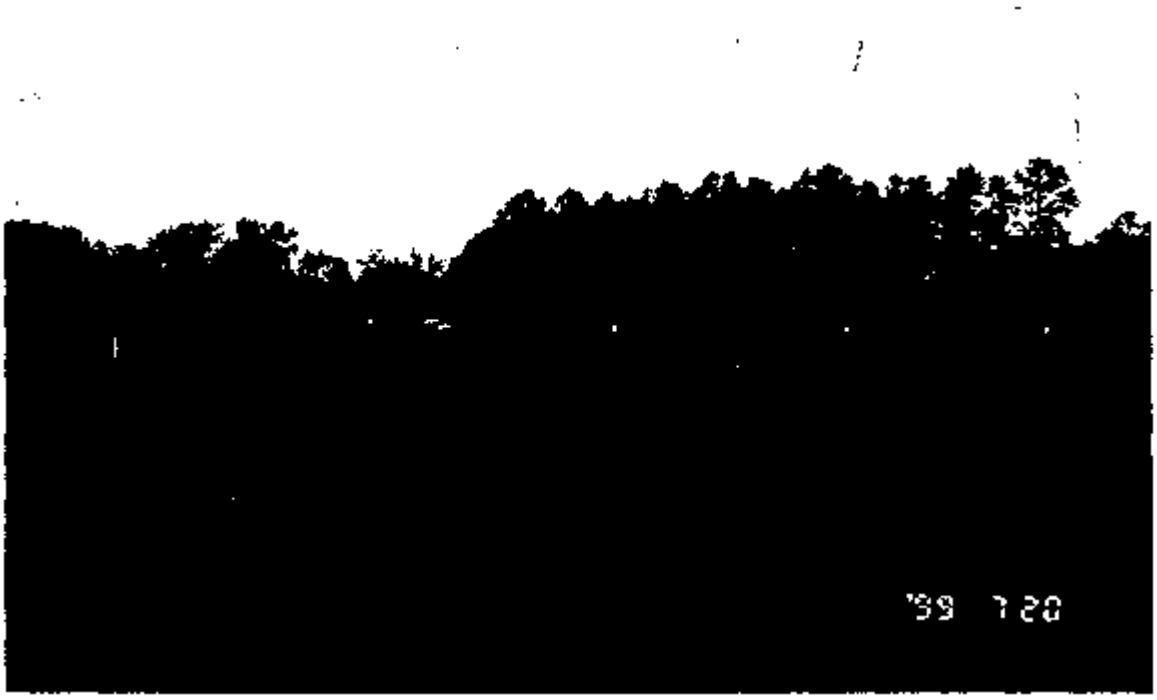
Miscellaneous As-Built Drawings, 1991

Final Project Operations Plan, December 1990

Miscellaneous Correspondence

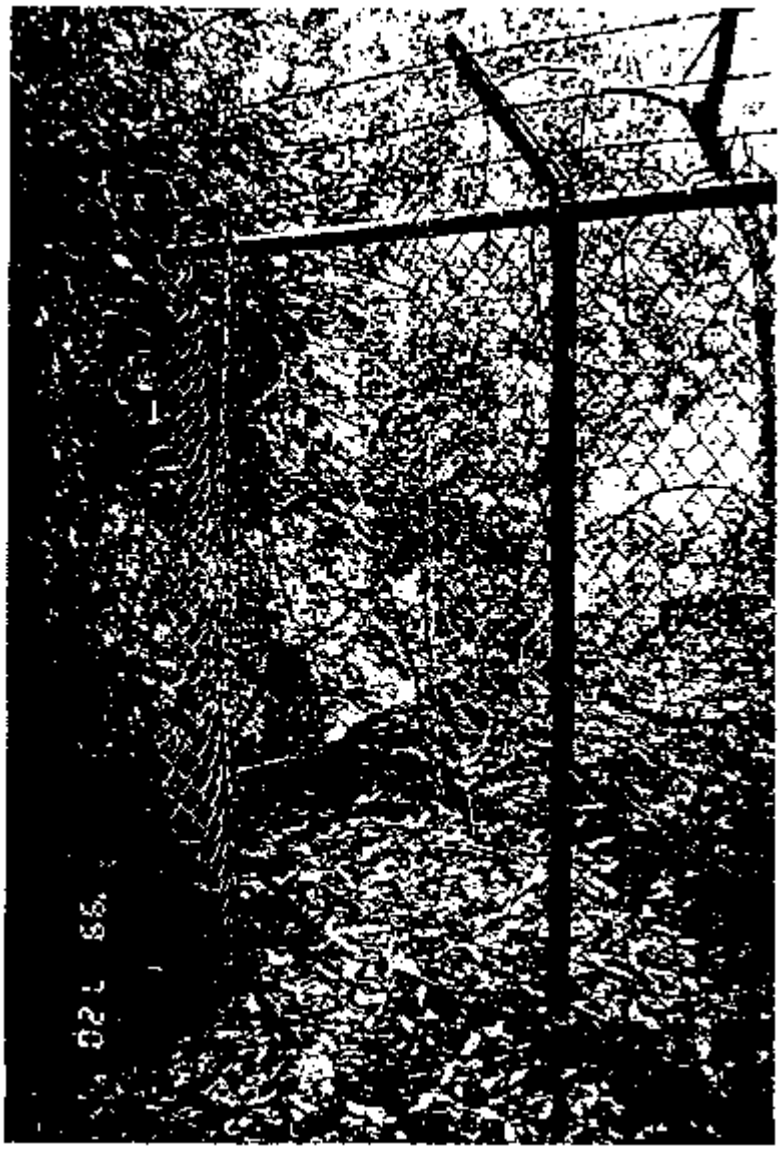
Attachment B

Site Photographs



South-West Corner of Pioneer Sands looking North

South-West Corner of Pioneer Sands looking East



Hole Cut in Perimeter Fence by Trespassers

Recent Erosion Repair Effort Located on North East Corner of Site

Recent Erosion Repair Effort Located on North East Corner of Site

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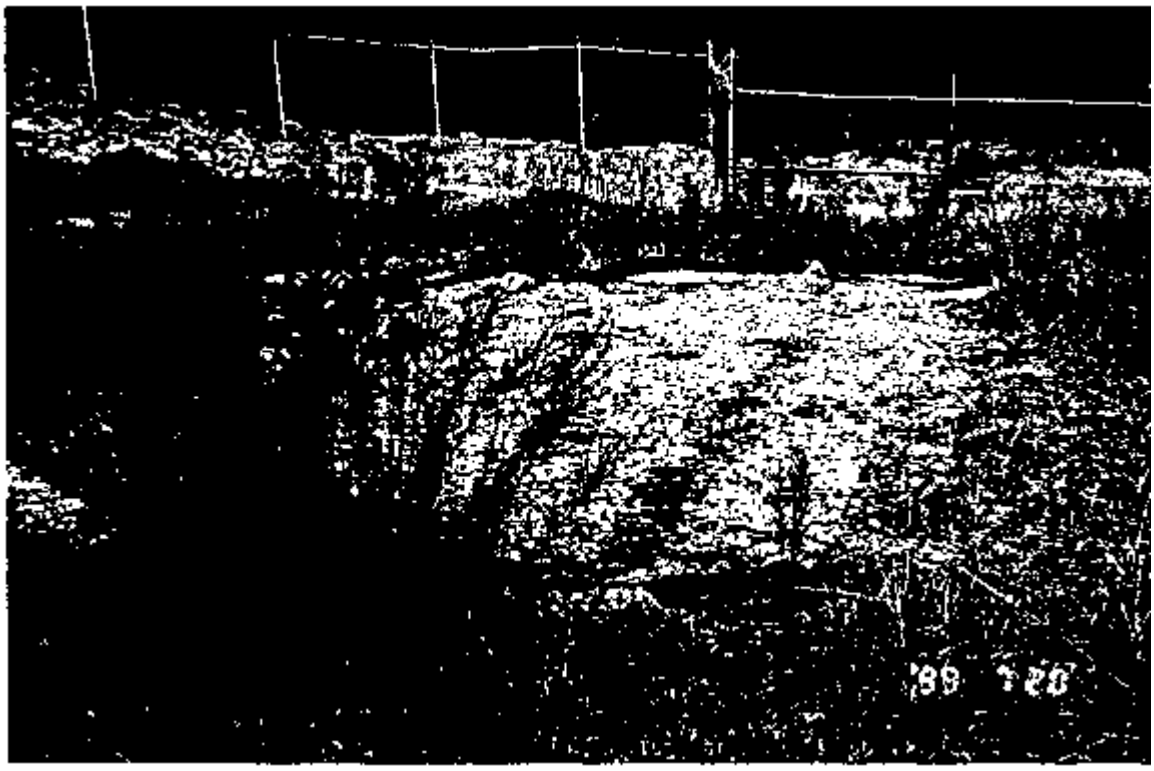

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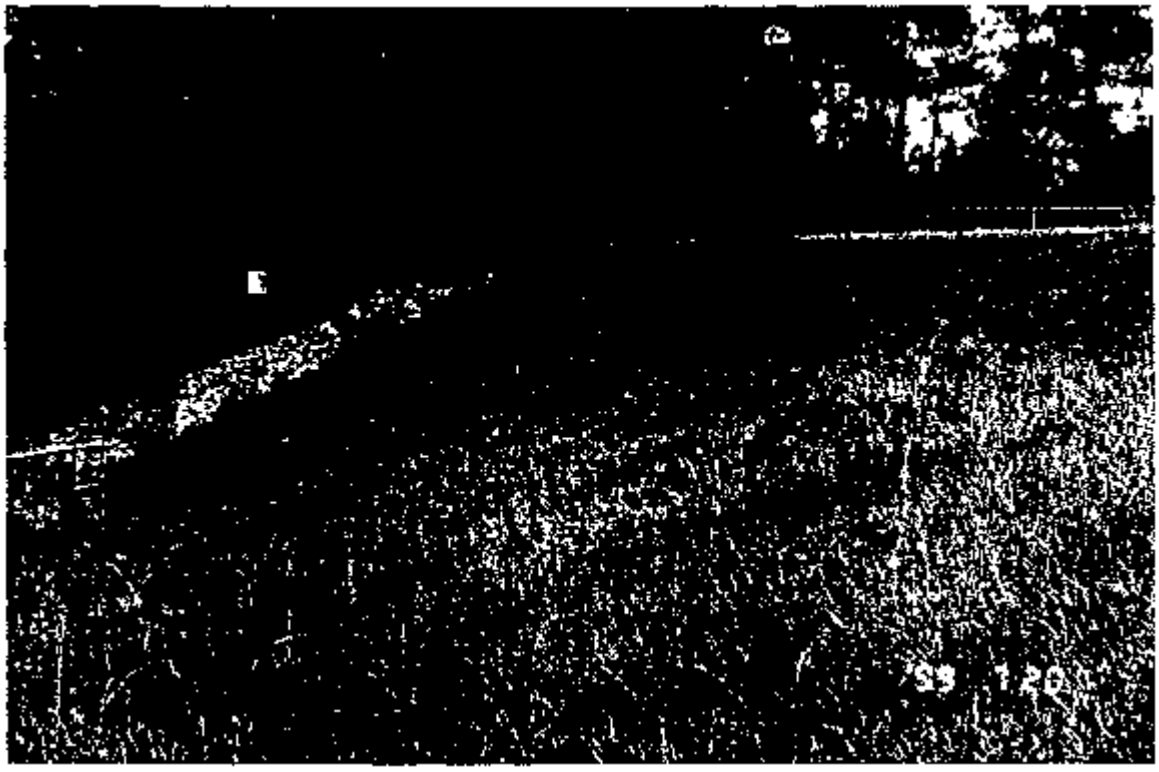

Recent Erosion Repair Effort Located on North East Corner of Site